



## State of New Jersey

Christine Todd Whitman  
Governor

Department of Environmental Protection

Robert C. Shinn, Jr.  
Commissioner

Mr. Jeff Catanzarita  
Remedial Project Manager  
United States Environmental Protection Agency  
Region 2  
290 Broadway  
New York, NY 10007-1866

JUN 23 1998

RE: Request for Modification of Higgins Farm permit equivalent

Dear Mr. Catanzarita:

This letter is in response to your request for a modification to your permit equivalent at the Higgins site. In your letter you requested the modification of the permit in three areas- Total Dissolved Solids, pH and the toxicity data.

With regard to the Total Dissolved Solids issue, the limitation of 500 mg/l may be removed as it is not a parameter of concern for this clean up. Your request to change the pH requirement to 5.5 to 9.0 is not acceptable. However, the NJDEP will allow the range to be 6.0 to 9.0 which is a typical range for most permits. Regarding the last issue, the chronic toxicity, revised regulations were adopted by the NJDEP for NJPDES program which recalculated the limitation to be 61% not the 80% as you requested.

One last comment which pertains to the sampling methodology that was used. Your data sheets submitted had a footnote that indicated that 24 hour composite samples were used. It was not clear if this comment pertained to all samples since 24 hour composite sampling is not appropriate for such parameters as pH, cyanide, dissolved oxygen, petroleum hydrocarbons and volatiles. For your future reference, samples should be grab or discrete not composites since the 24 hour waiting period for the composite may change the character of the sample result.

If you need to discuss this further, please feel free to contact me at 609-984-2991.

Sincerely,

  
Jane Ten Eyck  
Operations Manager

C: BC file  
T. K. O'Neill, BC  
N. Kemple, Bureau of Point Source Permitting



State of New Jersey

Christine Todd Whitman  
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Commissioner

Division of Water Quality  
P.O. Box 029 Trenton, NJ 08625-0029  
FAX: (609) 984-7938

MAY 27 1999

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

United States Environmental Protection Agency, Region 2  
290 Broadway,  
New York, NY 10007-1866  
Attn: Mr. Jeff Catanzarita, Remedial Project Manager

Re: Request for modification to the  
Surface Water Permit Equivalent for the  
Higgins Farm groundwater treatment plant

Dear Mr. Catanzarita:

This letter is a follow up to your requests for a reduction in the effluent sampling frequency, a reduction in the Method Detection Limit for Dieldrin and for an increase in the permitted treatment plant flow rate for the Surface Water Permit Equivalent for the Higgins Farm groundwater treatment plant.

A review of the extraction well data, the influent data and effluent data indicates consistent compliance with the limits in the Surface Water Permit Equivalent for the Higgins Farm groundwater treatment plant. Therefore, a reduction in the effluent monitoring frequency from weekly and semi-monthly to monthly has been granted and incorporated into Table II, page 6 of 9, of the Surface Water Permit Equivalent for the Higgins Farm. The request for a reduction in the MDL for Dieldrin has also been granted, consistent with the Department's Recommended Quantitation Level (RQL).

Therefore, page 6 of 9 of the Higgins Farm Permit Equivalent has been changed to reflect the reduced effluent monitoring frequencies. Page 6 of 9 of the Higgins Farm Permit Equivalent has also been changed with the addition of a special footnote for Dieldrin and the elimination of the 0.002 ug/L in the DRL/EPA Test Method column. Page 7 of 9 of the Higgins Farm Permit Equivalent has been changed by the addition of a new footnote stating the discharger shall meet the RQL of 0.02 ug/L for Dieldrin, not the specified effluent limitation. Page 6 of 9 and page 7 of 9 of the Higgins Farm Permit Equivalent shall be removed and replaced with the modified page 6 of 9 and page 7 of 9, which are enclosed.

Higgins Farm Equivalent-Page 7 of 9  
MODIFIED 6/1/99

NL - Not Limited; however, both monitoring and reporting are required.

- \* - A Discharge Reporting Level (DRL) is specified, as necessary, since the effluent concentration limitation is less than the detection level of the published analytical methods. The discharger is required to analyze the wastewater according to the analytical test method [in brackets], if specified. The discharger shall meet applicable DRL, not the specified effluent limitation, for reporting purposes. Should the discharger's wastewater data indicate that a pollutant is unquantified (less than the detection level) at an analytical level greater than the DRL, the result will be evaluated by the Department to verify that all QA/QC procedures were followed by the laboratory. If QA/QC procedures were not followed, the result would be considered a "Reporting Violation" as opposed to an "Effluent Violation". If QA/QC procedures were followed, then no action would be taken on the unquantified or non-detectable value. EPA Test Method and Method Detection Level are specified in accordance with 40 CFR 136.
- \*\* - Composite as indicated in this table means 24-hour or work-day flow proportional composite samples.
- \*\*\* - The discharger shall meet the Recommended Quantitation Level of 0.02 ug/L, not the specified effluent limitation.
- # - Analysis for this parameter shall follow the "Sample Preparation Procedure for Spectrochemical Determination of Total Recoverable Elements" contained in Method 200.2 and the specified analytical method. If a method is not specified, then analysis shall be done by Method 200.2 and Method 200.7, 200.8 or 200.9.

Higgins Farm Equivalent-Page 6 of 9  
MODIFIED 6/1/99

# 1. Effluent Limitations and Monitoring Requirements for Higgins Farm (Outfall 001)-TABLE II

There shall be no discharge of floating solids or visible foam in other than trace amounts and no visible sheen.

All samples taken in compliance with the specified monitoring requirements shall be representative of the monitored outfall and taken after the final treatment step, prior to discharge into the receiving stream.

PARAMETER	EFFLUENT LIMITATION	DRL*	MONITORING REQUIREMENTS
ALL VALUES ARE IN mg/L UNLESS OTHERWISE NOTED	MONTHLY / DAILY AVERAGE / MAXIMUM	[EPA TEST METHOD]	FREQUENCY/SAMPLE TYPE
Flow	0.108/NL	--	Continuous/Meter
BOD5 (mg/L)	NL/25	--	Monthly/Grab
Dissolved Oxygen (mg/L)	5.0 minimum	--	Monthly/Grab
pH (standard units)	6.5-8.5	--	Monthly/Grab
Petroleum Hydrocarbons (mg/L)	NL/15	--	Monthly/Grab
Total Organic Carbon (mg/L)	NL/50	--	Monthly/Composite
Total Dissolved Solids (mg/L)	NL/300	--	Monthly/Composite
Total Suspended Solids (mg/L)	NL/40	--	Monthly/Composite
Benzene	NL / 1.0	--	Monthly/Grab
Carbon Tetrachloride	NL / 0.25*	1.0	Monthly/Grab
Chlorobenzene	NL / 1.0	--	Monthly/Grab
Chloroform	NL / 1.0	--	Monthly/Grab
1,2-Dichloroethane	NL / 0.38*	1.0	Monthly/Grab
1,1-Dichloroethylene	NL / 0.337	1.0	Monthly/Grab
Cis-1,2-Dichloroethylene	NL / 1.0	--	Monthly/Grab
1,1,1,2-Tetrachloroethane	NL / 0.17 *	1.0	Monthly/Grab
Tetrachloroethylene	NL / 0.8*	1.0	Monthly/Grab
1,1,2-Trichloroethane	NL / 0.6*	1.0	Monthly/Grab
Trichloroethylene	NL / 1.0	--	Monthly/Grab
Vinyl Chloride	NL / 1.0	--	Monthly/Grab
Bis (2-Chloroethyl) ether	NL / 0.031*	5.0	Monthly/Composite
Bis (2-Ethylhexyl) phthalate	NL / 1.8*	2.5 [625]	Monthly/Composite
Hexachlorobutadiene	NL / 0.44*	1.0	Monthly/Composite
Dieldrin	NL / 0.0004****	--	Monthly/Composite
Total Recoverable Aluminum #	NL / 87 *	100	Monthly/Composite
Total Recoverable Antimony #	NL / 5.0	--	Monthly/Composite
Total Recoverable Arsenic #	NL / 0.017 *	0.5 [200.9]	Monthly/Composite
Total Recoverable Barium #	NL / 28	--	Monthly/Composite
Total Recoverable Beryllium #	NL / 0.0077*	1.0	Monthly/Composite
Total Recoverable Cadmium #	NL / 0.012*	1.0	Monthly/Composite
Total Recoverable Chromium #	NL / 0.29*	5.0 [200.7]	Monthly/Composite
Total Recoverable Cobalt #	NL / 5.2*	10	Monthly/Composite
Total Recoverable Copper #	NL / 2.3*	5.0 [200.7]	Monthly/Composite
Total Recoverable Iron #	NL / 300	--	Monthly/Composite
Total Recoverable Lead #	NL / 0.21*	0.3	Monthly/Composite
Total Recoverable Manganese #	NL / 50	--	Monthly/Composite
Total Recoverable Mercury #	NL / 0.012*	0.3 [245.1]	Monthly/Composite
Total Recoverable Nickel #	NL / 13	--	Monthly/Composite
Total Recoverable Vanadium #	NL / 14	--	Monthly/Composite
Total Recoverable Zinc #	NL / 47	--	Monthly/Composite
Total Cyanide	NL / 5.2	--	Monthly/Composite
Chronic Toxicity	NOEC=100%	--	SEE Page 8

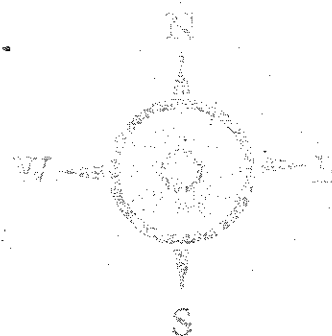
61%  
See Jan 23, 1998  
NTDEP letters from Jane Ten Eyck.

The request for an increase in the flow rate from 75 gpm to 100 gpm was not granted in order to ensure there will be no increase in the pollutant loading to Carter's Brook. Therefore, no modification for an increase in the flow rate has been incorporated into the Higgins Farm Permit Equivalent. If you have any questions pertaining to this matter, please contact me at (609) 292-4860, via fax at (609) 984-7938, or E-mail at JGROB@DEP.state.NJ.US.

Sincerely;

Jim Grob  
Senior Environmental Specialist  
Point Source Permitting, Region 2

C: Ms. Jane Ten Eyck  
Mr. George King  
Mr. T.K. O'Neill





## State of New Jersey

James E. McGreevey  
Governor

Department of Environmental Protection  
Division of Water Quality  
P.O. Box 29, Trenton, NJ 08625-029  
FAX: (609) 984-7938

Bradley M. Campbell  
Commissioner

To: Robert Soboleski, Chief  
Bureau of Operations, Maintenance and Monitoring

Through: Pilar Patterson, Chief *[Signature]* 4/2/03  
Bureau of Point Source Permitting - Region 2

Melisse Carasia Auriti, Supervisor *[Signature]* 3/31/03

From: Surya Shah, Principal Environmental Engineer

Subject: Higgins Farm Superfund Site  
Franklin Township, Somerset County  
Request for Modification of Permit Equivalent

This memorandum provides a response to your request dated January 29, 2003 for modification of the following permit equivalent requirements.

### Request:

1. Chronic Whole Effluent Toxicity (WET):
  - a. Authorize use of *Ceriodaphnia dubia* (Fleas) as the sole test organism instead of both *Pimephales promelas* and *Ceriodaphnia dubia* for the chronic WET analysis.
  - b. Modify the frequency of monitoring for chronic WET from quarterly to annual.
2. Modify the reporting threshold for Carbon Disulfide, Carbon tetrachloride, toluene, diethyl phthalate, Aluminum, Iron, Lead, Vanadium, and Zinc.
3. Modify the Acetone permit equivalent criteria from the current 2 ppb to 50 ppb.
4. Modify the cyanide analysis method quantitation level (discharge reporting level) from the current 5.2 ppb to 20 ppb.

### Response:

1. Chronic WET: We have reviewed the information submitted and recalculated the chronic WET permit equivalent limits based upon new information and updated regulations. The new limitation will be an IC25=74% instead of NOEC=100%. Additionally, we are authorizing use of *Ceriodaphnia dubia* as the only test organism. We are not modifying the monitoring frequency, which will remain quarterly.
- 2 & 3. We cannot modify the reporting threshold for the parameters noted in 2 and 3 above, as they are not part of the permit equivalent for which this Bureau is responsible. You will need to redirect this request to the appropriate program.
4. The permit equivalent effluent limitation will remain at 5.2 µg/l, however, the cyanide analysis method discharge reporting level will be modified to 40 µg/l, the current level allowed by the NJPDES permitting program.

Attached please find the modified permit equivalent. If you have any questions regarding this document, please feel free to contact Surya Shah at 2-4860.

C: Jane Ten Eyck, Bureau of Operations, Maintenance and Monitoring

## DESCRIPTION OF SITE

The Higgins Farm Superfund site was issued the original permit equivalent on August 4, 1994. This permit equivalent was modified April 14, 1999. A new request for modification of the permit equivalent was received on January 29, 2003. The contaminated groundwater is routed through an on-site treatment system and then discharges to Carters Brook, classified as FW2-NT waters, via an on-site pond.

## DESCRIPTION OF LIMITATIONS AND CONDITIONS SPECIFIC TO THE MODIFICATION OF PERMIT EQUIVALENT

### Whole Effluent Toxicity (WET):

Section 101(a) of the Clean Water Act (CWA) establishes a national policy of restoring and maintaining the chemical, physical and biological integrity of the Nation's waters. In addition, section 101(a)(3) of the CWA and the State's Surface Water Quality Standards (SWQS) at N.J.A.C. 7:9B-1.5(a)3 state that the discharge of toxic pollutants in toxic amounts is prohibited. Further, 40 CFR 122.44(d) and N.J.A.C. 7:14A-13.6(a) require that where the Department determines using site-specific WET data that a discharge causes, shows a reasonable potential to cause, or contributes to an excursion above the SWQS, the permitting authority must establish effluent limits for WET. In order to satisfy the requirements of the CWA, the State's SWQS and the NJPDES Regulations, the need for a water quality based effluent limitation (WQBEL) for WET was evaluated for this discharge.

WQBELs for chronic WET were calculated in accordance with N.J.A.C. 7:14A-13.6 and USEPA's "Technical Support Document for Water Quality Based Toxics Control (EPA/505/2-90-001), March 1991" (TSD).

In accordance with N.J.A.C. 7:9B-1.5(c)2, N.J.A.C. 7:14A-13.13(a)1, and section 2.0 of the TSD, the dilution factor of one (1) is used for both the  $Df_c$  and  $Df_a$  since the discharge is to an intermittent stream as defined in N.J.A.C. 7:9B-1.4 based on the municipal storm sewer system into which other discharges may contribute pollutants which when discharged together into the receiving water could potentially cause an exceedance of the narrative standard.

Consistent with recommendations in the TSD, values of 0.3 acute toxic unit ( $TU_a$ ) and 1.0 chronic toxic unit ( $TU_c$ ) were used to interpret the narrative water quality criteria for WET contained at N.J.A.C. 7:9B-1.14(c) (see Response to Comments 13-74 through 13-89, 29 NJR 1861, (May 5, 1997)). The acute WLA ( $WLA_a$ ) was translated to equivalent chronic toxic units ( $WLA_{ac}$ ), to enable comparison of acute and chronic WET limits, by multiplying the  $WLA_a$  by acute to chronic ratio (ACR) of 10 (ten).

The acute and chronic WLAs are then converted to an acute Long Term Average ( $LTA_{ac}$ ) and a chronic LTA ( $LTA_c$ ), using a site specific coefficient of variation (CV) of 0.3, and multipliers of 0.321 and 0.717 for the acute and chronic LTAs respectively. Those multipliers are based on the 99th percentile consistent with Response to Comments 13-74 through 13-89, 29 NJR 1861 and are found on Page 102 of the TSD. The resultant long term average values were evaluated and the more protective (e.g. lower) value selected for translation into a daily maximum WET limit using the applicable 99th percentile multiplier, as found on Page 103 of the TSD.

The daily maximum chronic WET limit of 1.35  $TU_c$  was then converted to a permit limitation expressed as an IC25. The resultant applicable limitation is an IC25 = 74 % effluent.

The test species method to be used for chronic testing shall be the *Ceriodaphnia dubia*, Survival and Reproduction Test, 40 CFR 136.3, method 1002.0. the existing permit, N.J.A.C. 7:9B-1.5 and the Department's "Chronic Toxicity Testing Specifications for Use in the NJPDES Permit Program" document. This document is included as Appendix A of this permit equivalent modification, in accordance with N.J.A.C. 7:14A-6.5, 11.2(a)2.iv. and 40 CFR Part 136.

Effluent samples for conducting WET testing are to be collected after the last treatment step, consistent with the collection location for all other parameters.

Antibacksliding/Antidegradation:

The chronic WET limitation contained in the modification is numerically less stringent than the existing permit. The reevaluation of the limitation was prompted by: a) the revisions to the NJPDES regulations, adopted on May 5, 1997, which changed the limitation calculation procedure and more recent chronic WET test results to calculate the CV (coefficients of variation).

The water quality criteria for toxicity in the SWQS does not establish an acceptable level of toxicity for a receiving water, but rather requires no toxics in toxic amounts. Since WET limitations are not expressed as concentrations or loadings that can be related to an instream concentration or mass, but rather as a measure of the aggregate toxicity of the effluent, any change in quality of the receiving waters must be measured using the SWQS directly. The water quality based effluent chronic WET limitation proposed in this modification has been developed to assure that the Surface Water Quality Standards continue to be met *and* met without an increase in instream toxicity.

The numerical difference in the limitations is a result of the refinement of the method for developing WET limits and new effluent data. As such, there will be no change in instream toxicity as a result of the change in the effluent limitation so that the antidegradation requirements set forth in N.J.A.C. 7:9B-1.5(d) are satisfied and further antidegradation analysis is not required.

**Cyanide:** The permittee shall comply with the Discharge Reporting Level of 40 µg/l, the current quantitation level for cyanide that can be reliably and consistently achieved by most State certified laboratories using the appropriate procedures specified in 40 CFR Part 136.

Permit Equivalent Modification Summary Table - 1

Outfall DSN001

Facility: Higgins Farm Superfund Site      Latitude: 40° 24' 20"      Longitude: 74° 36' 10"  
Type of Wastewater: Treated Groundwater      Average flow: 75 GPM      Receiving Water: Carters Brook

PARAMETER  ALL VALUES ARE IN µg/l UNLESS OTHERWISE NOTED	EXISTING PERMIT EQUIVALENT LIMITATION		MODIFIED PERMIT EQUIVALENT LIMITATION		MONITORING REQUIREMENT	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Frequency	Sample Type
Chronic WET, minimum <i>Ceriodaphnia dubia</i>	---	NOEC=100% effluent	---	IC25=74% effluent	Quarterly	composite
Cyanide, Total	NL	5.2	NL	5.2(a)	Weekly	composite

- (a) A Discharge Reporting Level (DRL) is specified, as necessary, since the effluent concentration limitation is less than the detection level of published analytical methods. The discharger is required to analyze the wastewater according to the analytical test method, if specified. The discharger shall meet the applicable DRL of 40 µg/l, not the specified effluent limitation, for reporting purposes. Should the discharger's wastewater data indicate that a pollutant is unquantified (less than the detection level) as an analytical level greater than the DRL, the result will be evaluated by the Department to verify that all QA/QC procedures were followed by the laboratory. If QA/QC procedures were followed, the result would be considered a "Reporting Violation" as opposed to an "Effluent Violation". If QA/QC procedures were followed, then no action would be taken on the unquantified or non-detectable value. EPA Test Method and Method Detection Level are specified in accordance with 40 CFR 136.



1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR HIGGINS FARM - Table II  
 Outfall DSN001

There shall be no discharge of floating solids or visible foam in other than trace amounts and no visible sheen.

All samples taken in compliance with the specified monitoring requirements shall be representative of the monitored outfall and taken after the final treatment step, prior to discharge into the receiving stream.

PARAMETER ALL VALUES ARE IN µg/l UNLESS OTHERWISE NOTED	EFFLUENT LIMITATION		DRL * [EPA TEST METHOD]	MONITORING REQUIREMENT	
	Monthly Average	Daily Maximum		Frequency	Sample Type
Flow (Million gallons per Day)	0.108	NL	---	Continuous	Meter
BOD <sub>5</sub>	NL	25	---	Semimonthly	Grab
Dissolved Oxygen, mg/l	---	5.0 minimum	---	Weekly	Grab
pH (standard units)	6.5 minimum	8.5	---	Weekly	Grab
Petroleum Hydrocarbons	NL	15	---	Semimonthly	Grab
Total Organic Carbon	NL	50	---	Semimonthly	Composite
Total Dissolved Solids (TDS)	NL	500	---	Weekly	Composite
Total Suspended Solids (TSS)	NL	40	---	Weekly	Composite
Benzene	NL	1.0	---	Weekly	Grab
Carbon Tetrachloride	NL	0.25	1.0	Weekly	Metered
Chlorobenzene	NL	1.0	---	Weekly	Grab
Chloroform	NL	1.0	---	Weekly	Grab
1,2-Dichloroethane	NL	0.38	1.0	Weekly	Grab
1,1-Dichloroethylene	NL	0.057	1.0	Weekly	Grab
Cis-1,2-Dichloroethylene	NL	1.0	---	Weekly	Grab
1,1,2,2-Tetrachloroethane	NL	0.17	1.0	Weekly	Grab
Tetrachloroethylene	NL	0.8	1.0	Weekly	Grab
1,1,2-Trichloroethane	NL	0.6	1.0	Weekly	Grab
Trichloroethylene	NL	1.0	---	Weekly	Metered
Vinyl Chloride	NL	1.0	---	Weekly	Grab
Bis(2-Chloroethyl) ether	NL	0.031	5.0	Weekly	Composite
Bis(2-Ethylhexyl) phthalate	NL	1.8	2.5 [625]	Weekly	Composite
Hexachlorobutadiene	NL	0.44	1.0	Weekly	Composite
Dieldrin	NL	0.00014	0.002 [608]	Weekly	Composite
Total Recoverable Aluminum #	NL	87	100	Weekly	Composite
Total Recoverable Antimony #	NL	5.0	---	Weekly	Composite
Total Recoverable Arsenic #	NL	0.017	0.5 [200.9]	Weekly	Composite
Total Recoverable Barium #	NL	28	---	Weekly	Composite
Total Recoverable Beryllium #	NL	0.0077	1.0	Weekly	Composite
Total Recoverable Cadmium #	NL	0.012	1.0	Weekly	Composite
Total Recoverable Chromium #	NL	0.29	5.0 [200.7]	Weekly	Composite
Total Recoverable Cobalt #	NL	5.2	10	Weekly	Composite
Total Recoverable Copper #	NL	2.3	5.0 [200.7]	Weekly	Composite

PARAMETER ALL VALUES ARE IN µg/l UNLESS OTHERWISE NOTED	EFFLUENT LIMITATION		DRL * [EPA TEST METHOD]	MONITORING REQUIREMENT	
	Monthly Average	Daily Maximum		Frequency	Sample Type
Total Recoverable Iron #	NL	300	---	Weekly	Composite
Total Recoverable Lead #	NL	0.28	0.3	Weekly	Composite
Total Recoverable Manganese #	NL	50	---	Weekly	Composite
Total Recoverable Mercury #	NL	0.012	0.2 [245.1]	Weekly	Composite
Total Recoverable Nickel #	NL	13	---	Weekly	Composite
Total Recoverable Vanadium #	NL	14	---	Weekly	Composite
Total Recoverable Zinc #	NL	47	---	Weekly	Composite
Total Cyanide	NL	5.2	40	Weekly	Composite
Chronic WET, IC25 <i>Ceriodaphnia dubia</i>		74% minimum	---	Quarterly	Composite

Foot Notes:

NL = Not Limited; however, both monitoring and reporting are required.

\* A Discharge Reporting Level (DRL) is specified, as necessary, since the effluent concentration limitation is less than the detection level of published analytical methods. The discharger is required to analyze the wastewater according to the analytical test method [in brackets], if specified. The discharger shall meet the applicable DRL, not the specified effluent limitation, for reporting purposes. Should the discharger's wastewater data indicate that a pollutant is unquantified (less than the detection level) as an analytical level greater than the DRL, the result will be evaluated by the Department to verify that all QA/QC procedures were followed by the laboratory. If QA/QC procedures were followed, the result would be considered a "Reporting Violation" as opposed to an "Effluent Violation". If QA/QC procedures were followed, then no action would be taken on the unquantified or non-detectable value. EPA Test Method and Method Detection Level are specified in accordance with 40 CFR 136.

\*\* Composite as indicated in this table means 24-hour or work-day flow-proportioned composite samples.

# Analysis for this parameter shall follow the "Sample Preparation Procedure for Spectrochemical Determination of Total Recoverable Elements" contained in Method 200.2 and the specified analytical method. If a method is not specified, then analysis shall be done by Method 200.2 and Method 200.7, 200.8 or 200.9.

## 2. Chemical Specific Testing Requirements:

All analysis shall be performed in accordance with N.J.A.C. 7:14A-2.5(a)(12)(ii) using an available method with sufficient sensitivity to detect the required effluent limitation.

## 3. Chronic WET Testing Requirements (Species and Methodology)

- a. The permittee shall conduct toxicity tests on its wastewater discharge in accordance with the provisions in this section. Such testing will determine if appropriately selected effluent concentrations adversely affect the test species.
- b. The test species method to be used for chronic testing shall be the *Ceriodaphnia dubia*, Survival and Reproduction Test, 40 CFR 136.3, method 1002.0. Such selection is based on the freshwater characteristics of the receiving stream, the existing permit equivalent, N.J.A.C. 7:9B-1.5 and the Department's "Chronic Toxicity Testing Specifications for Use in the NJPDES Permit Program" document. This document is included as Appendix A, in accordance with N.J.A.C. 7:14A-6.5, 11.2(a)2.iv. and 40 CFR Part 136.
- c. Any test that does not meet the specifications contained in the Department's "Chronic Toxicity Testing Specifications for Use in the NJPDES Program" document must be repeated within 30 days of the completion of the initial test. The repeat test shall not replace subsequent testing required in this permit equivalent modification.
- d. The permittee shall collect and analyze the concentration of ammonia-N in the effluent on the day a sample is collected for WET testing. This result is to be reported on the Biomonitoring Report Form.
- e. IC25 - Inhibition Concentration - Concentration of effluent which has an inhibitory effect on 25% of the test organisms for the monitored effect, as compared to the control (expressed as percent effluent).
- f. Test results shall be expressed as the IC25 for each test endpoint. Where a chronic toxicity testing endpoint yields IC25's from more than one test endpoint, the most sensitive endpoint will be used to evaluate effluent toxicity.
- g. Submit a Chronic Methodology Questionnaire within 60 days from the effective date of this permit equivalent modification. The permittee shall resubmit after any change of laboratory occurs.
- h. Submit a chronic WET test report within twenty-five days after the end of every quarterly monitoring period beginning from the effective date of this permit equivalent modification. The permittee shall submit toxicity test results on appropriate forms.
- i. Test reports shall be submitted to:  
New Jersey Department of Environmental Protection  
Division of Water Quality, Bureau of Point Source Permitting Region 2  
P.O. Box 029  
Trenton, New Jersey 08625

## 4. Monitoring Frequency and Mandatory Cessation of Discharge

- a. Chronic WET testing shall be conducted on representative effluent samples on a quarterly basis following this modification. If the test results show that the effluent is consistently meeting the chronic WET limitation of an IC25=74% effluent, then the discharge may continue (provided it meets all other specified limits). If the effluent does not meet the specified chronic WET limit, then the discharge shall cease until it is determined that the effluent can consistently meet the limit.
- b. If at any time the discharge does not meet the chronic WET or any chemical specific effluent limitation, the discharge shall cease until it is determined that the effluent can consistently meet the specified limitation.
- c. The requirement for cessation of discharge in paragraphs (a) and (b) above, should the discharge not meet the specified effluent limits, is in accordance with N.J.A.C. 7:14A-16.6(a)4, which states "A change in any condition that requires either a temporary or permanent reduction or elimination of any discharge or residual use or disposal practice regulated under the permit".

**APPENDIX A:**

**CHRONIC TOXICITY TESTING SPECIFICATIONS**

**FOR USE IN THE NJPDES PERMIT PROGRAM**

**Version 2.1**

**May 1997**

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### VI. REPORTING

### VII. METHODS SPECIFICATIONS

- A. Fathead Minnow (*Pimephales promelas*), Larval Survival and Growth Test, method 1000.0
- B. *Ceriodaphnia dubia*, Survival and Reproduction Test, method 1002.0
- C. Algal, (*Selenastrum capricornutum*), Growth Test, method 1003.0
- D. Sheepshead Minnow (*Cyprinodon variegatus*), Larval Survival and Growth Test, method 1005.0
- E. Inland Silverside (*Menidia beryllina*), Larval Survival and Growth Test, method 1006.0
- F. *Mysidopsis bahia*, Survival, Growth, and Fecundity Test, method 1007.0
- G. *Champia parvula*, Sexual Reproduction Test, method 1009.0

### VIII. REFERENCES

Notice: Mention of trade names or commercial products do not constitute endorsement or recommendation for use.

## I. AUTHORITY AND PURPOSE

These methods specifications for the conduct of whole effluent chronic toxicity testing are established under the authority of the NJPDES permitting program, N.J.A.C. 7:14A-6.5(a)2 and 40 CFR 136, for discharges to waters of the State. The methods referenced herein are included by reference in 40 CFR 136, Table 1.A. and, therefore, constitute approved methods for chronic toxicity testing. The information contained herein serves to clarify testing requirements not sufficiently clarified in those methods documents and also serves to outline and implement the interlaboratory Standard Reference Toxicant Program until a formal laboratory certification program is established under N.J.A.C. 7:18. As such these methods are intended to be used to determine compliance with discharge permits issued under the authority of the NJPDES permit program. Tests are to be conducted in accordance with the general conditions and test organism specific method specifications contained in this document. All other conditions and specifications can be found in 40 CFR 136 and USEPA methodologies.

Until a subchapter on chronic toxicity testing within the regulations governing the certification of laboratories and environmental measurements (N.J.A.C. 7:18) becomes effective, tests shall be conducted in conformance with the methodologies as designated herein and contained in 40 CFR 136. The laboratory performing the testing shall be within the existing acute toxicity testing laboratory certification program established under N.J.A.C. 7:18, as required by N.J.A.C. 7:9B-1.5(c)5.

Testing shall be in conformance with the subchapter on chronic toxicity testing within the N.J.A.C. 7:18 when such regulations become effective. The laboratory performing the toxicity testing shall be within the chronic toxicity testing laboratory certification program to be established under that subchapter, when it becomes effective.

These methods are incorporated into discharge permits as enforceable permit conditions. Each discharge permit will specify in Part IV of the permit, the test species specific methods from this document that will be required under the terms of the discharge permit. Although the test species specific methods for each permit are determined on a case-by-case basis, the purpose of this methods document is to assure consistency among dischargers and to provide certified laboratories with information on the universe of tests to be utilized so that they can make the necessary preparations, including completing the required Standard Reference Toxicant testing. Please note that these methodologies are required for compliance testing only. Facilities and/or laboratories conducting testing under the requirements of a Toxicity Identification Evaluation or for informational purposes are not bound by these methods.

This document constitutes the second version of the NJDEP's interim chronic methodologies. This version contains no significant changes to the test methods themselves. However, in keeping with the Department's continued emphasis on good laboratory practices and quality control, the areas addressing the Standard Reference Toxicant Program, data analysis and data reporting, have been significantly revised.

## II. GENERAL CONDITIONS

### A. LABORATORY SAFETY, GLASSWARE, ETC.

All safety procedures, glassware cleaning procedures, etc., shall be in conformance with 40 CFR 136 and USEPA's "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms," "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms" and N.J.A.C. 7:18.

### B. TEST CONCENTRATIONS / REPLICATES

All testing is to be performed with a minimum of five effluent concentrations plus a dilution water control. A second reference water control is optional when a dilution water other than culture water is used. The use of both a 0.5 or 0.75 dilution factor is acceptable for the selection of test concentrations. If hypothesis testing will be used to determine the test endpoint, one effluent concentration shall be the chronic permit limitation, unless the existing data for the discharge indicate that the NOEC is expected to be significantly less than the permit limit. The use of the 0.5 dilution factor may require more than five dilutions to cover the entire range of effluent concentrations as well as the chronic permit limit, since the permit limit will often not be one of the nominal concentrations in a 0.5 dilution series. In such an instance, the 0.5 dilution series may be altered by including an additional test concentration equal to the permit limit in the dilution series, or by changing the concentration closest to the permit toxicity limit to be equal to that limit. The Department recommends the use of the 0.75 dilution factor using Table 1.0 to determine test concentrations. That table establishes test concentrations based on the chronic toxicity limitation.

For either the 0.5 or 0.75 dilution factor, there shall be at least one test concentration above the permit limitation and at least three test concentrations below the permit limit along with the dilution water control unless the permit limitation prohibits such (e.g., limitations greater than 75% effluent). An effort shall be made to bracket the anticipated test result.

To use Table 1.0, locate the permit limit in column 4. The dilution series becomes the row that corresponds to the permit limit in column 4. For example, a permit limit of 41 would require a dilution series of the dilution water control, 17%, 23%, 31%, 41% and 55% effluent.

The number of replicates used in the test must, at a minimum, satisfy the specifications of the applicable methods contained herein. Increased data sensitivity can be obtained by increasing the number of replicates equally among test concentrations and thus an increased number of replicates is acceptable. Further, the use of nonparametric statistical analysis requires a minimum of four replicates per test concentration. If the data for any particular test is not conducive to parametric analyses and if less than four replicates were included, the test may not be considered acceptable for compliance purposes.

The use of single concentration tests consisting of the permit limitation as a concentration and a control is not permitted for compliance purposes, but may be used by a permittee in the conduct of a Toxicity Investigation Evaluation (TIE) or for information gathering purposes. Such a test would be considered a "pass" if there was no significant difference in test results, using hypothesis testing methods.

Table 1.0: 0.75 DILUTION SERIES INDEXED BY PERMIT LIMIT

			Permit Limit					Permit Limit			
Col #	1	2	3	4	5	Col #	1	2	3	4	5
	0.4	0.6	0.8	1	1.3		22	29	38	51	68
	0.8	1.1	1.5	2	2.7		22	29	39	52	69
	1.3	1.7	2.3	3	4		22	30	40	53	71
	1.7	2.3	3	4	5.3		23	30	41	54	72
	2.1	2.8	3.8	5	6.7		23	31	41	55	73
	2.5	3.4	4.5	6	8		24	32	42	56	75
	3	4	5	7	9		24	32	43	57	76
	3	5	6	8	11		24	33	44	58	77
	4	5	7	9	12		25	33	44	59	79
	4	6	8	10	13		25	34	45	60	80
	5	6	8	11	15		26	34	46	61	81
	5	7	9	12	16		26	35	47	62	83
	5	7	10	13	17		27	35	47	63	84
	6	8	11	14	19		27	36	48	64	85
	6	8	11	15	20		27	37	49	65	87
	7	9	12	16	21		28	37	50	66	88
	7	10	13	17	23		28	38	50	67	89
	8	10	14	18	24		29	38	51	68	91
	8	11	14	19	25		29	39	52	69	92
	8	11	15	20	27		30	39	53	70	93
	9	12	16	21	28		30	40	53	71	95
	9	12	17	22	29		30	41	54	72	96
	10	13	17	23	31		31	41	55	73	97
	10	14	18	24	32		31	42	56	74	99
	11	14	19	25	33		32	42	56	75	100
	11	15	20	26	35	24	32	43	57	76	
	11	15	20	27	36	24	32	43	58	77	
	12	16	21	28	37	25	33	44	59	78	
	12	16	22	29	39	25	33	44	59	79	
	13	17	23	30	40	25	34	45	60	80	
	13	17	23	31	41	26	34	46	61	81	
	14	18	24	32	43	26	35	46	62	82	
	14	19	25	33	44	26	35	47	62	83	
	14	19	26	34	45	27	35	47	63	84	
	15	20	26	35	47	27	36	48	64	85	
	15	20	27	36	48	27	36	48	65	86	
	16	21	28	37	49	28	37	49	65	87	
	16	21	29	38	51	28	37	50	66	88	
	16	22	29	39	52	28	38	50	67	89	
	17	23	30	40	53	28	38	51	68	90	
	17	23	31	41	55	29	38	51	68	91	
	18	24	32	42	56	29	39	52	69	92	
	18	24	32	43	57	29	39	52	70	93	
	19	25	33	44	59	30	40	53	71	94	
	19	25	34	45	60	30	40	53	71	95	
	19	26	35	46	61	30	41	54	72	96	
	20	26	35	47	63	31	41	55	73	97	
	20	27	36	48	64	31	41	55	74	98	
	21	28	37	49	65	31	42	56	74	99	
	21	28	38	50	67	32	42	56	75	100	

\* Select the dilution series by finding the row which contains the permit limit in column #4.

NOTE: All values are in units of "% effluent" not toxic units.



## C. DILUTION WATER

### 1. Marine and Estuarine Waters

A high quality natural water, such as the Manasquan River Inlet is strongly recommended as the dilution water source for chronic toxicity testing with marine and estuarine organisms. The use of the receiving water as the dilution water source is not required. Saline waters prepared with hypersaline brine and deionized water may also be used as dilution water. Hypersaline brines shall be prepared from a high quality natural seawater and shall not exceed a concentration of 100 ppt. The type of a dilution water for a permittee may not be changed without the prior approval of the Department.

The standard test salinity shall be 25 ppt, except for *Champia parvula*, which shall be tested at 30 ppt. Since most effluents are freshwater based, in most cases it will be necessary to adjust the salinity of the test concentrations to the standard test salinity.

### 2. Fresh Waters

A high quality natural water, such as Round Valley Reservoir (if access is allowed) or Lake Hopatcong, is strongly recommended as the dilution water source for chronic toxicity testing with freshwater organisms. It is not required to perform the toxicity testing with the receiving water as dilution water. Tests performed with a reconstituted water or up to 20% Diluted Mineral Water (DMW) as dilution water is acceptable. For testing with *Ceriodaphnia dubia*, the addition of 5 µg/l selenium (2 µg/l selenium with natural water) and 1 µg/l vitamin B12 is recommended (Keating and Dagbusan, 1984; Keating, 1985 and 1988). The source of a dilution water for a permittee may not be changed without the prior approval of the Department. Reconstituted water and DMW should be prepared with Millipore Super Q<sup>R</sup> or equivalent, meet the requirements of N.J.A.C. 7:18-6 and should be aerated a minimum of 24 hrs prior to use, but not supersaturated.

## D. EFFLUENT SAMPLE COLLECTION

Effluent samples shall be representative of the discharge being regulated. For each discharge serial number (DSN), the effluent sampling location shall be the same as that specified in the NJPDES permit for other sampling parameters unless an alternate sampling point is specified in the NJPDES discharge permit. For industrial dischargers with a combined process/sanitary waste stream, effluent sampling shall be after chlorination, unless otherwise designated in the permit.

For continuous discharges, effluent sampling shall consist of 24 hour composite samples consisting either of equal volumes taken once every hour or of a flow-proportionate composite sample, unless otherwise approved by the Department. At a minimum, three samples shall be collected as specified above, one every other day. The first sample shall be used for test initiation and the first renewal. The second sample for the next two renewals. The third sample shall be used for the final three renewals. For the *Champia* and *Selenastrum* tests, a single sample shall be collected not more than 24 hours prior to test initiation. No effluent sample shall be over 72 hours old at the time of its use to initiate or renew solutions in a test. It is acceptable to collect samples more frequently for chronic WET testing and if samples are collected daily for acute toxicity testing conducted concurrently, available samples may be used to renew the test solutions as appropriate.

For all other types of discharges, effluent sampling shall be conducted according to specifications contained within the discharge permit, methodology questionnaire or as otherwise specified by the Department. The use of grab samples or other special sampling procedures will be based on time of occurrence and duration of intermittent discharge events.

If a municipal discharger has concerns that the concentrations of ammonia and/or chlorine in an effluent are adequate to cause violations of the permit limit for chronic toxicity testing, the permittee should conduct analyses, as specified in USEPA's toxicity investigation methods documents, to illustrate the relationship between chronic effluent toxicity and chlorine and/or ammonia as applicable. This data may then be submitted

to the Department as justification for a request to use modified test procedures, which account for ammonia and/or chlorine toxicity, in future chronic toxicity tests. The Department may, where adequate justification exists, permit the adjustment of these pollutants in the effluent sample if discharge limits for these pollutants are contained in the NJPDES permit and those permit limitations are adequate for the protection of water quality. Any proposed modified test procedures to adjust effluent chlorine and/or ammonia shall be approved by the Department prior to use of those test procedures for any compliance testing.

Except for filtration through a 2 mm or larger screen or an adjustment to the standard test salinity, no other adjustments to the effluent sample shall be made without prior written approval by the Department. Aeration of samples prior to test start shall be minimized where possible and samples shall not be aerated where adequate saturation exists to maintain dissolved oxygen.

## E. PHYSICAL CHEMICAL MEASUREMENTS

At a minimum, the physical chemical measurements shall be as follows:

- pH and dissolved oxygen shall be measured at the beginning and end of each 24 hour exposure period, in at least one chamber, of the high, medium and low test concentrations and the control. In order to ensure that measurements for these parameters are representative of the test concentrations during the test, measurements for these parameters should be taken in an additional replicate chamber for such concentrations which contains no test organisms, but is subject to the same test conditions.
- Temperature shall either be monitored continuously, measured daily in at least two locations in the environmental control system, or measured at the beginning of each 24 hr exposure period in at least one replicate for each treatment.
- Salinity shall be measured in all salt water tests at the beginning of each 24 hour exposure period, in at least one replicate for each treatment.
- For all freshwater tests, alkalinity, hardness and conductivity shall be measured in each new sample (100% effluent) and control.
- Nitrite, nitrate and ammonia shall be measured in the control before each renewal in the mysid test only.
- For samples of discharges where concentrations of ammonia and/or chlorine are known or are suspected to be sufficient to cause toxicity, it is recommended that the concentrations of these pollutants be determined and submitted with the standardized report form. The laboratory is advised to consult with the permittee to determine if these parameters should be measured in the effluent. Where such measurements are deemed appropriate, measurements shall be conducted at the beginning of each 24 hour exposure period. Also, since a rise in the test pH can affect the toxicity of ammonia in the effluent, analysis of ammonia during the test may be appropriate if a rise in pH is accompanied by a significant increase in mortality.

## F. STATISTICS

The use of both hypothesis testing techniques and point estimate techniques are currently in use by the Department or by permittees for compliance purposes. The NJPDES permit should be checked to determine which type of analysis is required and appropriate for each specific facility. It is not acceptable to simply evaluate any data by "visual data review" unless in the analysis of survival data, no mortality occurred in the test. All data sets must be appropriately statistically evaluated.

For hypothesis testing techniques, statistical analysis shall follow the protocols in USEPA (1988, 1989) to evaluate adverse effects. A significance level of 0.05 shall be utilized to evaluate such effects. Use of a protocol not contained in these documents must be accompanied by a reference and explanation addressing its

applicability to the particular data set. Please note the following when evaluating data using hypothesis testing techniques.

Special attention should be given to the omission and inclusion of a given replicate in the analysis of mysid fecundity data (USEPA 1994, p. 275) and *Ceriodaphnia* reproduction data (USEPA 1994, page 174).

Determination of acceptability criteria and average individual dry weight for the growth endpoints must follow the specifications in the applicable documents (e.g., p.84 for saltwater methods document.)

**Use of nonparametric statistical analyses requires a minimum of four replicates per test concentration. If the data for any particular test are not conducive to parametric analyses and if less than four replicates were included, the test may not be acceptable to the Department.**

Where hypothesis testing is used for compliance purposes, if the results of hypothesis testing indicate that a deviation from the dose response occurs such that two test concentrations are deemed statistically significant from the control but an intermediate test concentration is not, the test is deemed unacceptable and cannot be used for compliance testing purposes.

For point estimate techniques, statistical analysis should follow the protocol contained in "A Linear Interpolation Method for Sublethal Toxicity: The Inhibition Concentration (ICp) Approach (Version 2.0), July 1993, National Effluent Toxicity Assessment Center Technical Report 03-93." Copies of the program can be obtained by contacting the Department. The linear interpolation estimate ICp values and not the bootstrap mean ICp, shall be reported for permit compliance purposes. The ICp value reported on the Discharge Monitoring Report shall be rounded off as specified in the Department's "Discharge Monitoring Report (DMR) Instruction Manual, December 1993." IC25 values shall be reported under the parameter code listed as "NOEC" on the DMR, until the DMR's are adjusted accordingly.

If the result reported by the ICp method is greater than the highest concentration tested, the test result is reported as "greater than C" where "C" is the highest tested concentration. If the ICp is lower than the lowest concentration tested, the test result is reported as "less than C" where "C" is the lowest tested concentration.

If separate NOEC's/IC25's can be calculated from multiple test endpoints, for example a reproductive endpoint and a growth endpoint, the lowest NOEC/IC25 value expressed in units of "% effluent" will be used to determine permit compliance and should, therefore, be reported as the NOEC/IC25 value for the test. If the NOEC value for growth and/or reproduction is not lower than that for survival, the NOEC/IC25 value reported for the test shall be as survival. For saltwater tests, where additional controls are used in a test (i.e. brine and/or artificial sea salt control), a T-test shall be used to determine if there is a significant difference between the original test control and the additional controls. If there is a significant difference between any of the controls, the test may be deemed unacceptable and if so, will not be used for permit compliance.

### III. TEST ACCEPTABILITY CRITERIA

Any test that does not meet these acceptability criteria will not be used by the Department for any purpose and must be repeated as soon as practicable, with a freshly collected sample.

1. Tests must be performed by a laboratory approved for the conduct of chronic toxicity tests and certified for acute toxicity testing under N.J.A.C. 7:18.
2. Test results may be rejected due to inappropriate sampling, including the use of less than three effluent samples in a test and/or use of procedures not specified in a permit or methodology questionnaire, use of frozen or unrefrigerated samples or unapproved pretreatment of an effluent sample.
3. Controls shall meet the applicable performance criteria specified in the Table 2.0 and in the individual method specifications contained herein.
4. Acceptable and applicable Standard Reference Toxicant Data must be available for the test.
5. No unapproved deviations from the applicable test methodology may be present.
6. When using hypothesis testing techniques, a deviation from the dose response as explained in the statistical portion of this document shall not be present in the data.

Table 2.0:

#### CONTROL PERFORMANCE

TEST ORGANISM	MINIMUM SURVIVAL	MINIMUM WEIGHT GAIN	MINIMUM FECUNDITY/ REPRODUCTION
<i>Pimephales promelas</i>	80%	0.25 mg avg	N/A
<i>Ceriodaphnia dubia</i>	80%	N/A	Average of $\geq 15$ young per surviving female
<i>Selenastrum capricornutum</i>	Density $\geq 2 \times 10^5$ cells/ml	N/A	Variability in controls not to exceed 20%.
<i>Cyprinodon variegatus</i>	80%	0.60 mg (unpreserved) avg 0.50 mg (preserved) avg	N/A
<i>Menidia beryllina</i>	80%	0.50 mg (unpreserved) avg 0.43 mg (preserved) avg	N/A
<i>Mysidopsis bahia</i>	80%	0.2 mg per mysid avg	egg production by 50% of control females if fecundity is used as an endpoint.
<i>Champia parvula</i>	100%	N/A	$\geq 10$ cystocarps per plant Plants in controls and lower test concentrations shall not fragment so that individual plants cannot be identified.

THE DETERMINATION OF A TEST AS UNACCEPTABLE DOES NOT RELIEVE THE FACILITY FROM MONITORING FOR THAT MONITORING PERIOD

## IV. STANDARD REFERENCE TOXICANT TESTING

All chronic testing shall be accompanied by testing with a Standard Reference Toxicant (SRT) as a part of each laboratory's internal quality control program. Such a testing program should be consistent with the quality assurance/quality control protocols described in the USEPA chronic testing manuals. Laboratories may utilize the reference toxicant of their choice and toxicants such as cadmium chloride, potassium chloride, sodium dodecyl sulfate and copper sulfate are all acceptable. However, Potassium chloride has been chosen by several laboratories and is recommended by the Department. The concentration of the reference toxicant shall be verified by chemical analysis in the low and high test concentrations once each year or every 12 tests, whichever is less. It is not necessary to run SRT tests, for all species using the same SRT.

### A. INITIAL STANDARD REFERENCE TOXICANT (SRT) TESTING REQUIREMENTS

At a minimum, this testing shall include an initial series of at least five SRT tests for each test species method. Acceptable SRT testing for chronic toxicity shall be performed utilizing the short term chronic toxicity test methods as specified herein. Reference toxicant tests utilizing acute toxicity testing methods, or any method other than those contained in this document are not acceptable. The laboratory should forward results of the initial SRT testing, including control charts, the name of the reference toxicant utilized, the supplier and appropriate chemical analysis of the toxicant to either address listed in the reporting requirements section herein. The initial series of a least five SRT tests for a specific test species method shall be completed and approved in writing by the Department prior to the conduct of any chronic toxicity testing for compliance purposes.

### B. SUBSEQUENT SRT TESTING REQUIREMENTS

After receiving the initial approval from the Department to conduct chronic toxicity tests for compliance purposes, subsequent SRT testing shall be conducted as follows:

1. Where organisms used in testing are cultured at the testing laboratory, SRT testing should be conducted once per month for each species/method.
2. Where the laboratory purchases organisms from a laboratory certified in New Jersey for the conduct of acute toxicity testing and approved for the conduct of chronic toxicity testing for the test organism in question (i.e. the "supplier laboratory"), SRT data provided by the "supplier laboratory" for each lot of organisms purchased is acceptable as long as the SRT test result falls within the control limits of the control chart established by the "supplier laboratory" for that organism. The laboratory using purchased organisms is responsible for the results of any compliance tests they perform.
3. A testing laboratory purchasing organisms from a supplier laboratory must still perform SRT testing on a quarterly basis at a minimum, for each species they test with, in order to adequately document their own interlaboratory precision.
4. If a testing laboratory purchasing organisms elects not to use the SRT data from a "supplier laboratory" or such data is unavailable or where organisms are purchased from another organism supplier, the testing laboratory must conduct SRT testing on each lot of organisms purchased.
5. For industrial laboratories certified under N.J.A.C. 7:18 to conduct acute toxicity tests, only the SRT testing conditions specified in 2. through 4. above apply. Where that laboratory/facility cultures their own test organisms, the frequency of SRT testing required will be determined on a case by case basis, based on the frequency of testing for that facility.

**NOTE:** Based on these requirements, SRT data are considered applicable to a compliance test when the SRT test results are acceptable and the SRT test is conducted within 30 days of the compliance test, for the test species and SRT in question. Therefore, it is not necessary for an approved laboratory to run an SRT test every month if the laboratory is not conducting compliance tests for a particular species.

### C. CHANGING OF AN ESTABLISHED REFERENCE TOXICANT

The SRT used for any species by a laboratory may be changed at any time provided that the following conditions have been satisfied:

1. A series of at least three reference toxicant tests are conducted with the new reference toxicant and the results of those tests are identified as satisfactory, in writing, by the Department.
2. Laboratories must continue using the already approved SRT in their ongoing QA/QC program, until such time as the letter referenced above, is received by the laboratory.

### D. CONTROL CHARTS

Control charts shall be established from SRT test results in accordance with the procedures outlined in the USEPA methods documents. Control charts shall be constructed using IC25's using the following methods:

1. The upper and lower control limits shall be calculated by determining  $\pm$  two standard deviations above and below the mean.
2. SRT test results which exhibit an IC25 that is greater than the highest concentration tested or less than the lowest concentration tested (i.e. a definitive endpoint cannot be determined), shall not be used to establish control charts.
3. SRT tests which do not meet the acceptability criteria for a specific species shall not be used to establish control charts.
4. All values used in the control charts should be as nominal concentrations. However, the control charts shall be accompanied by a chart tabulating the test results as measured concentrations.
5. An outlier (i.e. values which fall outside the upper and lower control limits) should be included on the control chart unless it is determined that the outlier was caused by factors not directly related to the test organisms (e.g., test concentration preparation) as the source of variability would not be directly applicable to effluent tests. In such case, the result and explanation shall be reported to the Department within 30 days of the completion of the SRT test.

The control chart established for the initial series of SRT data submitted will be used by the laboratory and the Department to determine outliers from SRT test results reported in the "NJPDES Biomonitoring Report Form - Chronic Toxicity Test" submitted by the permittees for the test species. These initial control limits will remain unchanged until twenty SRT tests have been completed by the laboratory.

The following procedures shall be used for continually updating control charts after twenty acceptable SRT tests have been completed:

1. Once a laboratory has completed twenty acceptable SRT tests for a test species, the upper and lower control limits shall be recalculated with those twenty values.
2. For each successive SRT test conducted after these first twenty tests, a moving average shall be calculated and the control limits reevaluated using the last twenty consecutive test results.
3. The upper and lower control limits shall be reported on the "NJPDES Biomonitoring Report Form - Chronic Toxicity Tests" along with the SRT test result.

#### **E. UNACCEPTABLE SRT TEST RESULTS**

If a laboratory produces any SRT test results which are outside the established upper and lower control limits for a test species at a frequency greater than one test in any ten tests, a report shall be forwarded to the Department at the address contained herein. This report shall include any identified problem which caused the values to fall outside the expected range and the corresponding actions that have been taken by the laboratory. The Department may not accept or may require repeat testing for any toxicity testing that may have been affected by such an occurrence.

If a laboratory produces two consecutive SRT test results or three out of any ten test results which are outside the established upper and lower limits for a specific test species, the laboratory shall be unapproved to conduct chronic toxicity tests for compliance purposes for that test species. Reapproval shall be contingent upon the laboratory producing SRT test results within the established upper and lower control limits for that test species in two consecutive SRT tests. If one or both of those test results again fall outside the established control levels, the laboratory is unapproved for that test species until five consecutive test results within the established upper and lower control limits are submitted and approved by the Department.

#### **F. ANNUAL SUBMITTALS**

Control charts shall be forwarded to the Department on an annual basis, on the anniversary of approval for the test species.

The Department may request, at any time, any information which is essential in the evaluation of SRT results and/or compliance data.

## V. TEST CANCELLATION / RESCHEDULING EVENTS

A lab may become aware of QA problems during or immediately following a test that will prevent data from being submitted or a lab may be unable to complete a tests due to sample collection or shipping problems. If for any reason a chronic toxicity test is initiated and then prematurely ended by the laboratory or at the request of the permittee, the laboratory shall submit the form entitled "Chronic Whole Effluent Toxicity Testing Test Cancellation / Rescheduling Event Form" contained herein. This form shall be used to detail the reason for prematurely ending the test. This completed form and any applicable raw data sheets shall be submitted to the appropriate biomonitoring program at the address above within 30 days of the cessation of the test.

Tests are considered to be initiated once test organisms have been added to all test chambers.

Submission of this form does not relieve the facility from monitoring for that monitoring period.

## VI. REPORTING

The report form entitled "NJPDES Biomonitoring Report Form - Chronic Toxicity Tests" should be used to report the results of all NJPDES chronic compliance biomonitoring tests. Laboratory facsimiles are acceptable but must contain all information included on any recent revisions of the form by the Department. Statistical printouts and raw data sheets for all endpoints analyzed shall be included with the report submitted to the Department. Two copies of all chronic toxicity test report forms shall be submitted to the following address as applicable:

Bureau of Point Source Permitting Region 1 OR  
Bureau of Point Source Permitting Region 2 (as indicated in the cover letter)

New Jersey Department of Environmental Protection  
Division of Water Quality  
PO Box 29  
Trenton, NJ 08625-0029

It is not necessary to attach a copy of a test report form to the Discharge Monitoring Report (DMR) form when submitting this form to the Department. However, the results of all chronic toxicity tests conducted for compliance purposes must be reported on the DMR form under the appropriate parameter code in the monitoring period in which the test was conducted.

## VII. METHOD SPECIFICATIONS

The following method specifications shall be followed as specified in the NJPDES permit. Any changes to these methods will not be considered acceptable unless they are approved in writing by the Department, prior to their use.

- A. Fathead Minnow (*Pimephales promelas*), Larval Survival and Growth Test, method 1000.0
- B. *Ceriodaphnia dubia*, Survival and Reproduction Test, method 1002.0
- C. Algal, (*Selenastrum capricornutum*), Growth Test, method 1003.0
- D. Sheepshead Minnow (*Cyprinodon variegatus*), Larval Survival and Growth Test, method 1005.0
- E. Inland Silverside (*Menidia beryllina*), Larval Survival and Growth Test, method 1006.0
- F. *Mysidopsis bahia*, Survival, Growth, and Fecundity Test, method 1007.0
- G. *Champia parvula*, Sexual Reproduction Test, method 1009.0



## VIII. REFERENCES

1. Keating, K. 1985. The influence of Vitamin B12 deficiency on the reproduction of Daphnia pulex Leydig (Cladocera). J. Crustacean Biology 5:130-136.
2. Keating, K. 1988. N.J.D.E.P. Project C29589, Fiscal 1988 Third Quarter Summary Report. Producing Nutritionally Competent Daphnids for Use in Bioassay. 44p.
3. Keating, K., and B. Dagbusan. 1984. Effect of selenium deficiency on cuticle integrity in Cladocera (Crustacea). Proc. Natl. Acad. Sci. USA 81:3433-3437.
4. NJDEP, 1993. Discharge Monitoring Report (DMR) Instruction Manual.
5. USEPA. 1994. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms. EPA-600/4-91-003. July 1994. Second Edition.
6. USEPA. 1994. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. EPA/600/4-91/002. July 1994. Third Edition.

0320462011  
James E. McGreevey  
Governor



State of New Jersey  
Department of Environmental Protection  
WATER SUPPLY ADMINISTRATION  
BUREAU OF WATER ALLOCATION  
P.O. BOX 426  
TRENTON, NEW JERSEY 08625-0426  
TEL. # 609-292-2957  
FAX. # 609-633-1495

Bradley M. Campbell  
Commissioner

September, 21, 2004

Mr. Paul La Framboise  
La Framboise Well Drilling  
PO Box 303, 647 Thompson Rd.  
Thomson, CT 06277-0303

Dear Mr. La Framboise:

Re: Higgins Superfund Site, Missing Well Records  
Permit Equivalency for PI 2539E  
Activity Code EQP040001

I am sending you this letter to clarify our telephone conversation of September 16, 2004. The Bureau of Water Allocation (Bureau) has completed its technical review of the Water Allocation Permit Equivalency Application dated March 20, 2004 for ground water removal resulting from ground water remediation the Higgins Superfund Site, 71A Rt. 518, Franklin Township, NJ. It appears that the well records, which record the as-built data, have not yet been submitted to the Bureau. Pursuant to N.J.A.C. 7:9D-1.15, Well Record Requirements: "a licensed well driller shall within 90 days of completion of the drilling, constructing, installing, repairing, replacing, or modifying any well requiring a permit to drill, file a completed record on the forms provided by the Department".

The Bureau now has in its files for the 20 wells

1. Monitoring Well Permits, Nos. 2837845 through 283764.
2. A Monitoring Well list.
3. A Groundwater Monitoring Well Certification - Form B - Location Certification.
4. Laframboise Well Permitting Information.
5. No well records.

Based on our telephone conversation it is agreed that I will send you information to facilitate your well record search and if necessary well record generation. In response, you will submit the well records from your files or generate well records for Monitoring Well Permit Nos. 2837845

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through 283764 for the recovery wells (N.J.A.C. 7:9D-2.1.3, Category 3 Resource Recovery Wells). Please submit the completed well records to my attention at the Bureau of Water Allocation, PO Box 426, Trenton, NJ 08625-0426. Should you have questions concerning well record generation please contact Lynn Stout (Well Permitting Section) at 609-984-6831.

For your convenience I have enclosed:

1. Monitoring Well Permit Nos. 2837845 through 2837864 (20 permits total on 2 pages).
2. A pre-labeled Monitoring Well Record Form, 1 for each of the 20 recovery wells, Nos. 2837845 through 2837864.

In addition, please verify if Monitoring Well Permit No. 2837865, which is in our files but not part of the permit equivalency application, was installed. For your clarification an aerial photograph with its approximate NAD 83 State Plane Coordinates based on the permit location sketch is enclosed.

N.J.A.C. 7:9D is available on the DEP Water Allocation web site  
[http://www.nj.gov/dep/watersupply/NJAC7\\_9D.pdf](http://www.nj.gov/dep/watersupply/NJAC7_9D.pdf).

Please provide the information requested above by October 21, 2004. Once this information is received the Bureau can complete the permit equivalency application process. If you have any questions or comments please feel free to contact me at 609-292-2957 or [Patricia.Garcia@dep.state.nj.us](mailto:Patricia.Garcia@dep.state.nj.us).

Very Truly Yours,

*Patricia Garcia*

Patricia Garcia  
Bureau of Water Allocation

Enclosures (25)

c: Mike Kenney / DEP-SRP  
Pamela Baxter / USEPA.



# State of New Jersey

Department of Environmental Protection

Richard J. Codey  
Acting Governor

Bradley M. Campbell  
Commissioner

DIVISION OF WATER SUPPLY  
WATER SUPPLY PERMITTING  
BUREAU OF WATER ALLOCATION  
P.O. BOX 426  
TRENTON, NEW JERSEY 08625-0426  
TEL. # 609-292-2957  
FAX. # 609-633-1495

June 8, 2005

Higgins Farm Superfund Site  
c/o USEPA, Region 2  
Central NJ Waste Management Section  
290 Broadway  
New York, NY 10007-1866  
Attn: Pam Baxter

Dear Ms. Baxter:

Re: **Water Allocation Permit Equivalency - New**  
**Program Interest ID: 2539E**  
**Activity No. EQP040001**

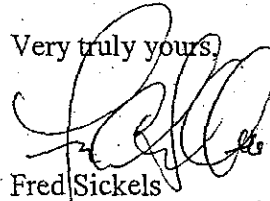
Enclosed is a Permit Equivalency issued pursuant to the Water Supply Management Act, N.J.S.A. 58:1A-1 et seq. This Equivalency becomes effective on July 1st, 2005 and is to divert water from twenty remediation wells in the following Municipalities and Counties:

MUNICIPALITY	COUNTY
Franklin Twp.	Somerset

Please note that due to our conversion into the Department's NJEMS database, our permit numbering system has been changed. EQP040001 is your Permit Activity Number, and 2539E is now your Program interest ID and will appear on all forms and correspondence from the Bureau of Water Allocation. Please reference your Program Interest ID and Activity No. in all correspondence.

Please be advised that as you are responsible for complying with the terms and conditions of the enclosed equivalency and you should review them thoroughly. Failure to comply with any or all of the terms and conditions could result in penalties and/or revocation of the equivalency.

Very truly yours,



Fred Sickels  
Assistant Director  
Division of Water Supply

Enclosure

CERTIFIED MAIL NO.

70033110 00035032 7201

c: Bureau of Water Allocation  
Northern Bureau of Water Compliance & Enforcement Element  
~~Patricia Garcia, BWA~~  
Edward Putnam, Assistant Director, SRP  
Dawn Cernak, Stevenson Environmental



State of New Jersey  
Department of Environmental Protection  
Bureau of Water Allocation  
PO Box 426, Trenton, New Jersey 08625-0426



## Permit Equivalency

The New Jersey Department of Environmental Protection grants this permit\* in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents.

<b>Program Interest ID:</b> 2539E <b>Permit Number:</b> EQP040001	<b>Issuance Date:</b> 06/08/2005	<b>Effective Date:</b> 07/01/2005	<b>Expiration Date:</b> 06/30/2015
<b>Name and Address of Applicant</b>  HIGGINS FARM SUPERFUND SITE C/O Severson Environmental 71a Rt 518 Princeton, NJ 08540		<b>Location of Activity/Facility</b> Franklin Twp Somerset	
		<b>Type of Permit</b> Water Allocation Permit - Equivalency - New	<b>Statute(s)</b> N.J.S.A. 58:1A-1

This permit grants permission to divert water from the approved sources in the attached permit inventory, in the following municipalities, for the following water uses:

<b>MUNICIPALITY</b> Franklin Twp	<b>COUNTY</b> Somerset	<b>Water Uses:</b> Pollution Control
-------------------------------------	---------------------------	--------------------------------------

This permit is subject to the attached Conditions.

Approved by the authority of:  
Michele Putnam, Administrator  
Division of Water Supply

Fred Sickels, Assistant Director  
Bureau of Water Allocation

6-8-05  
Date

\* Permit means Certification, Approval, Registration, Equivalency, etc.

**HIGGINS FARM SUPERFUND SITE**  
2539E

Permit Equivalency : EQP040001

**Permit Inventory**

**Water Diversion Sources** - Water may be diverted under this permit from the following sources:

Source Designation (Well Permit No. or Intake No.)	Description	Subject Item ID
2800037845	RW1	WSWL0000321505
2800037846	RW2	WSWL0000321506
2800037847	RW3	WSWL0000321507
2800037848	RW3A	WSWL0000321508
2800037849	RW4	WSWL0000321509
2800037850	RW5	WSWL0000321510
2800037851	RW6	WSWL0000321511
2800037852	RW7	WSWL0000321512
2800037853	RW8A	WSWL0000321513
2800037854	RW8	WSWL0000321514
2800037855	RW9	WSWL0000321515
2800037856	RW9A	WSWL0000321516
2800037857	RW10	WSWL0000321517
2800037858	RW10A	WSWL0000321518
2800037859	RW11	WSWL0000321519
2800037860	RW12	WSWL0000321520
2800037861	RW13	WSWL0000321521
2800037862	RW14	WSWL0000321522
2800037863	RW15	WSWL0000321523
2800037864	RW16	WSWL0000321524

**Group Subject Items** - The following items are grouped sources for the purpose of setting permit requirements outlined in this document:

Group Designation	Group Description	Group Subject Item ID	Group Members
HIGGINS FARM SUPERFUND SITE	2539E EQ PERMIT - ALL DIVERSION SOURCES	WSWA0000759902	DIABASE AQUIFER SOURCES, ALL SOURCES (WARG785874)
DIABASE AQUIFER SOURCES	ALL SOURCES	WARG0000785874	2800037845, RW1 (WSWL321505)
			2800037846, RW2 (WSWL321506)
			2800037847, RW3 (WSWL321507)
			2800037848, RW3A (WSWL321508)
			2800037849, RW4 (WSWL321509)

**HIGGINS FARM SUPERFUND SITE**  
2539E

Permit Equivalency : EQP040001

**Group Subject Items** - The following items are grouped sources for the purpose of setting permit requirements outlined in this document:

Group Designation	Group Description	Group Subject Item ID	Group Members
DIABASE AQUIFER SOURCES	ALL SOURCES	WARG0000785874	2800037850, RW5 (WSWL321510)
			2800037851, RW6 (WSWL321511)
			2800037852, RW7 (WSWL321512)
			2800037853, RW8A (WSWL321513)
			2800037854, RW8 (WSWL321514)
			2800037855, RW9 (WSWL321515)
			2800037856, RW9A (WSWL321516)
			2800037857, RW10 (WSWL321517)
			2800037858, RW10A (WSWL321518)
			2800037859, RW11 (WSWL321519)
			2800037860, RW12 (WSWL321520)
			2800037861, RW13 (WSWL321521)
			2800037862, RW14 (WSWL321522)
			2800037863, RW15 (WSWL321523)
			2800037864, RW16 (WSWL321524)



**HIGGINS FARM SUPERFUND SITE  
2539E**

Permit Equivalency : EQP040001

**Permit Requirements**

**Limit Requirements**

The following limits apply and are the maximum permitted allocation:

**Final Permit Phase from 07/01/2005 -**

Subject Item	Parameter	Limit
HIGGINS FARM SUPERFUND SITE, 2539E EQ PERMIT - ALL DIVERSION SOURCES (WSWA759902)	Maximum Diversion Rate	<= 75 Gallons Per Minute. [N.J.A.C. 7:19- 2]
	Water Diverted	<= 3.35 Million Gallons Per Month. [N.J.A.C. 7:19- 2]
		<= 40.18 Million Gallons Per Year. [N.J.A.C. 7:19- 2]

**Other Limit Requirements**

**Final Permit Phase from 07/01/2005 -**

Subject Item	Parameter	Limit
2800037845, RW1 (WSWL321505)	Rated Pump Capacity	<= 5 Gallons Per Minute. [N.J.A.C. 7:19- 2]
2800037846, RW2 (WSWL321506)	Rated Pump Capacity	<= 5 Gallons Per Minute. [N.J.A.C. 7:19- 2]
2800037847, RW3 (WSWL321507)	Rated Pump Capacity	<= 5 Gallons Per Minute. [N.J.A.C. 7:19- 2]
2800037848, RW3A (WSWL321508)	Rated Pump Capacity	<= 5 Gallons Per Minute. [N.J.A.C. 7:19- 2]
2800037849, RW4 (WSWL321509)	Rated Pump Capacity	<= 5 Gallons Per Minute. [N.J.A.C. 7:19- 2]
2800037850, RW5 (WSWL321510)	Rated Pump Capacity	<= 5 Gallons Per Minute. [N.J.A.C. 7:19- 2]
2800037851, RW6 (WSWL321511)	Rated Pump Capacity	<= 5 Gallons Per Minute. [N.J.A.C. 7:19- 2]
2800037852, RW7 (WSWL321512)	Rated Pump Capacity	<= 5 Gallons Per Minute. [N.J.A.C. 7:19- 2]
2800037853, RW8A (WSWL321513)	Rated Pump Capacity	<= 5 Gallons Per Minute. [N.J.A.C. 7:19- 2]
2800037854, RW8 (WSWL321514)	Rated Pump Capacity	<= 5 Gallons Per Minute. [N.J.A.C. 7:19- 2]
2800037855, RW9 (WSWL321515)	Rated Pump Capacity	<= 5 Gallons Per Minute. [N.J.A.C. 7:19- 2]
2800037856, RW9A (WSWL321516)	Rated Pump Capacity	<= 5 Gallons Per Minute. [N.J.A.C. 7:19- 2]
2800037857, RW10 (WSWL321517)	Rated Pump Capacity	<= 5 Gallons Per Minute. [N.J.A.C. 7:19- 2]
2800037858, RW10A (WSWL321518)	Rated Pump Capacity	<= 5 Gallons Per Minute. [N.J.A.C. 7:19- 2]
2800037859, RW11 (WSWL321519)	Rated Pump Capacity	<= 5 Gallons Per Minute. [N.J.A.C. 7:19- 2]

**HIGGINS FARM SUPERFUND SITE**

2539E

Permit Equivalency : EQP040001

**Other Limit Requirements**

Final Permit Phase from 07/01/2005 -

Subject Item	Parameter	Limit
2800037860, RW12 (WSWL321520)	Rated Pump Capacity	$\leq$ 5 Gallons Per Minute. [N.J.A.C. 7:19- 2]
2800037861, RW13 (WSWL321521)	Rated Pump Capacity	$\leq$ 5 Gallons Per Minute. [N.J.A.C. 7:19- 2]
2800037862, RW14 (WSWL321522)	Rated Pump Capacity	$\leq$ 5 Gallons Per Minute. [N.J.A.C. 7:19- 2]
2800037863, RW15 (WSWL321523)	Rated Pump Capacity	$\leq$ 5 Gallons Per Minute. [N.J.A.C. 7:19- 2]
2800037864, RW16 (WSWL321524)	Rated Pump Capacity	$\leq$ 5 Gallons Per Minute. [N.J.A.C. 7:19- 2]

**Monitoring Requirements**

Final Permit Phase from 07/01/2005 -

Subject Item	Requirement	Frequency	Monitored Parameter	Monitoring Method
DIABASE AQUIFER SOURCES, ALL SOURCES (WARG785874)	The monthly diversion quantity from the group of sources indicated shall be monitored. [N.J.A.C. 7:19- 2]	Each Month	Water Diverted	Meter

**Submittal/Action Requirements**

Final Permit Phase from 07/01/2005 -

Applicable Subject Items	Submittal/Action Type	Requirement
DIABASE AQUIFER SOURCES, ALL SOURCES (WARG785874)	Submit Private Quarterly Report	The required monitoring results shall be recorded on the form provided by the Department. The completed form shall be submitted within 30 days after the end of each quarter. [N.J.A.C. 7:19- 2]
HIGGINS FARM SUPERFUND SITE, 2539E EQ PERMIT - ALL DIVERSION SOURCES (WSWA759902)	Submit Renewal Application	A renewal application must be submitted three months prior to the expiration date. [N.J.A.C. 7:19- 2]

**Text Requirements****All Phases**

HIGGINS FARM SUPERFUND SITE, 2539E EQ PERMIT - ALL DIVERSION SOURCES (WSWA759902)

1. The diversion shall be metered with a totalizing flow meter. [N.J.A.C. 7:19- 2]
2. At a minimum, each flow meter shall be calibrated at least once every five years. [N.J.A.C. 7:19- 2]

## HIGGINS FARM SUPERFUND SITE

2539E

Permit Equivalency : EQP040001

### Text Requirements

#### All Phases

HIGGINS FARM SUPERFUND SITE, 2539E EQ PERMIT - ALL DIVERSION SOURCES (WSWA759902)

3. The permittee shall investigate to the Department's satisfaction complaints by users of wells or surface water supplies within the zone of influence of its diversion to determine what impact the diversion has had on such wells or surface water supplies. A report on these investigations shall be forwarded to the Bureau of Water Allocation. Any well or surface water supply which becomes damaged, dry, has reduced capacity, reduced water quality or is otherwise rendered unusable as a water source as a result of the permittee's diversions shall be repaired or replaced at the expense of the permittee. Work shall be in accordance with all State, County and Municipal construction standards for potable water. After reviewing all applicable investigational reports the Department of Environmental Protection, along with the USEPA, will make the final determination regarding the validity of such complaints, the scope or sufficiency of such investigations, and will determine how to resolve any problems resulting from the diversion. [N.J.A.C. 7:19- 2]
4. The operation of the water withdrawal project shall not cause long-term progressive lowering of groundwater levels, permanent loss of storage capacity or substantial impact on low flows of perennial streams or serve to spread the contamination. [N.J.A.C. 7:19- 2]
5. All well construction and decommissioning activity shall be conducted in accordance with N.J.A.C. 7:9D et seq. and applicable regulations. [N.J.A.C. 7:19- 2]
6. The pumping equipment capacity may be increased and well locations may be changed provided that the maximum diversion rate and the water diverted monthly and annual allocation limits are not exceeded. The permittee must notify the Bureau of Water Allocation in writing 30 days prior to any such changes. [N.J.A.C. 7:19- 2]
7. The issuance of this permit shall not be deemed to affect in any way action by the Department of Environmental Protection of the State of New Jersey on any future application. [N.J.A.C. 7:19- 2]
8. No change in plans or specifications shall be made except with the prior written permission of the Department of Environmental Protection of the State of New Jersey. [N.J.A.C. 7:19- 2]
9. The granting of this permit shall not be construed to in any way affect the title or ownership of property, and shall not make the Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:19- 2]
10. This permit does not waive the obtaining of Federal or other State or local government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approval's and permits have been obtained. [N.J.A.C. 7:19- 2]
11. A copy of this permit shall be kept at the facility site, and shall be exhibited upon request of any person. [N.J.A.C. 7:19- 2]
12. The Department has the right to enter and inspect any site, building, or equipment, or any portion thereof, owned or operated by the permittee, at any time, in order to ascertain compliance or noncompliance with N.J.S.A. 58:1A-1 et seq., 58:4A-4.1 et seq., 58:12A-1 et seq., these rules, or any other agreement or order issued or entered into pursuant thereto. Such right shall include, but not be limited to, the right to require the testing of any equipment at the facility, to sketch or photograph any portion of the site, building or equipment, to copy or photograph any document or records necessary to determine such compliance or noncompliance, and to interview any employees or representative of the owner, operator, or permittee. Such right shall be absolute and shall not be conditioned upon any action by the Department, except the presentation of appropriate credentials as requested and compliance with appropriate standard safety procedures. [N.J.A.C. 7:19- 2]
13. This permit may be transferred, with the consent of the Department, but only for the identical use of the waters. [N.J.A.C. 7:19- 2]
14. If the authorized diversion privileges are not currently diverted, subject to contract, or reasonably required for a demonstrated future need, they shall revert back to the State upon renewal or modification of the permit. [N.J.A.C. 7:19- 2]
15. The permittee shall protect each source from vandalism, tampering, and contamination at all times. [N.J.A.C. 7:19- 2]
16. This permit shall expire as indicated on the permit approval cover page; however, any action required pursuant to a critical area designation shall take precedence over this expiration date. [N.J.A.C. 7:19- 2]

June 8, 2005

Higgins Farm Superfund Site  
C/O Severson Environmental  
71A Rt. 518  
Princeton NJ 08540  
Attn: Pam Baxter

Dear Ms. Baxter:

Re: Water Allocation Permit Equivalency - New  
Program Interest ID: 2539E  
Activity No.: EQP040001

Enclosed are the following pre-printed Quarterly Diversion and Monitoring Report Forms that have been generated for your permit equivalency:

PI Number	Activity Number	Preprint ID	Mon Period Start	Mon Period End	Activity Type
2539E	EQP040001	45314	7/1/2005	9/30/2005	Water Allocation Permit Equivalency - New
2539E	EQP040001	45315	10/1/2005	12/31/2005	Water Allocation Permit Equivalency - New

The forms enclosed must be submitted by the dates indicated on the report form cover pages.

Also enclosed are monitoring reports for the first two quarters of 2005. In order to keep accurate records of water usage, please submit the following forms by July 30, 2005:

PI Number	Activity Number	Preprint ID	Mon Period Start	Mon Period End	Activity Type
2539E	UDS040001	44981	1/1/2005	3/31/2005	UDS
2539E	UDS040001	44982	4/1/2005	6/30/2005	UDS

Please contact Patricia Garcia at (609) 292-2957 if you have questions.

[ ] Check here for revised report

NJDEP Preprint ID: 44981



State of New Jersey  
Department of Environmental Protection  
Water Supply Administration - Bureau of Water Allocation  
PO Box 426, Trenton, New Jersey 08625-0426  
(609) 292-2957 Phone/ (609) 633-1231 Fax

Water Allocation Monitoring Report - UDS

RESPONSIBLE ENTITY:

USEPA  
290 BROADWAY - 19TH FLR  
NEW YORK, NY 10278

LOCATION OF ACTIVITY:

HIGGINS FARM SUPERFUND SITE  
RT 518  
FRANKLIN TWP, NJ 08873

REPORT RECIPIENT:

NEIL RAVENSBERGEN  
C/O SEVENSON ENVIRONMENTAL  
71A RT 518  
PRINCETON, NJ 08540

PROGRAM INTEREST:

2539E

ACTIVITY CODE:

UDS040001

MONITORING PERIOD:

01/01/2005 - 03/31/2005

\*PERMIT EFFECTIVE DATE:

01/01/2003

**INSTRUCTIONS**

- 1) Reports must be completed and submitted as directed by the Department.
- 2) Forms must be completed in ink only.
- 3) All values must be reported in units indicated on the pre-printed forms.

*I certify under penalty of law in accordance with N.J.S.A 58:1A-5(b) that the information provided in this report is accurate and complete.*

NAME

TITLE

SIGNATURE

DATE

PHONE NUMBER

UDS Quarterly Monitoring Report

Preprint Creation Date: 03/02/2005

\*Permit means Approval, Registration, Certification, etc.

[ ] Check here for revised report

NJDEP Preprint ID: 44982



State of New Jersey  
Department of Environmental Protection  
Water Supply Administration - Bureau of Water Allocation  
PO Box 426, Trenton, New Jersey 08625-0426  
(609) 292-2957 Phone/ (609) 633-1231 Fax

Water Allocation Monitoring Report - UDS

RESPONSIBLE ENTITY:

USEPA  
290 BROADWAY - 19TH FLR  
NEW YORK, NY 10278

LOCATION OF ACTIVITY:

HIGGINS FARM SUPERFUND SITE  
RT 518  
FRANKLIN TWP, NJ 08873

REPORT RECIPIENT:

NEIL RAVENSBERGEN  
C/O SEVENSON ENVIRONMENTAL  
71A RT 518  
PRINCETON, NJ 08540

PROGRAM INTEREST:

2539E

ACTIVITY CODE:

UDS040001

MONITORING PERIOD:

04/01/2005 - 06/30/2005

\*PERMIT EFFECTIVE DATE:

01/01/2003

**INSTRUCTIONS**

- 1) Reports must be completed and submitted as directed by the Department.
- 2) Forms must be completed in ink only.
- 3) All values must be reported in units indicated on the pre-printed forms.

*I certify under penalty of law in accordance with N.J.S.A 58:1A-5(b) that the information provided in this report is accurate and complete.*

NAME

TITLE

SIGNATURE

DATE

PHONE NUMBER

UDS Quarterly Monitoring Report

Preprint Creation Date: 03/02/2005

\*Permit means Approval, Registration, Certification, etc.

# Water Diversion And Monitoring Results Form

PROGRAM INTEREST: 2539E - HIGGINS FARM SUPERFUND SITE

MONITORING PERIOD: 04/01/2005 - 06/30/2005

ACTIVITY CODE: UDS040001 - Unapproved Diversion Sources

Subject/Item	Parameter	Required Frequency	APR		MAY		JUN		Report Value in Units of:
			Quantity/Result	Sample Date	Quantity/Result	Sample Date	Quantity/Result	Sample Date	
WARG 790332 - DIABASE AQUIFER SOURCES, ALL SOURCES	Water Diverted	Each Month							Million Gallons

☐ Check here for revised report

NJDEP Preprint ID: 45314



State of New Jersey  
Department of Environmental Protection  
Water Supply Administration - Bureau of Water Allocation  
PO Box 426, Trenton, New Jersey 08625-0426  
(609) 292-2957 Phone/ (609) 633-1231 Fax

Quarterly Diversion and Monitoring Report -Private

RESPONSIBLE ENTITY:

USEPA  
290 BROADWAY - 19TH FLR  
NEW YORK, NY 10278

LOCATION OF ACTIVITY:

HIGGINS FARM SUPERFUND SITE  
RT 518  
FRANKLIN TWP, NJ 08873

REPORT RECIPIENT:

NEIL RAVENSBERGEN  
C/O SEVENSON ENVIRONMENTAL  
71A RT 518  
PRINCETON, NJ 08540

PROGRAM INTEREST:

2539E

ACTIVITY CODE:

EQP040001

MONITORING PERIOD:

07/01/2005 - 09/30/2005

\*PERMIT EFFECTIVE DATE:

07/01/2005

**INSTRUCTIONS**

- 1) Reports must be completed and submitted to the Bureau of Water Allocation by the last day of the month following the close of the specified monitoring period. Failure to submit the required information by the due date will result in automatic violation(s) of the specified Water Allocation Permit.

1st Quarter	JAN, FEB, MAR	Report due April 30th
2nd Quarter	APR, MAY, JUN	Report due July 30th
3rd Quarter	JUL, AUG, SEP	Report due October 30th
4th Quarter	OCT, NOV, DEC	Report due January 30th

- 2) Forms must be completed in ink only.

- 3) All values must be reported in units indicated on the pre-printed forms.

The diversion is measured by: ☐ Totalizing flow meter(s) ☐ Estimated If not metered, provide the basis of estimation: \_\_\_\_\_

Check appropriate box indicating method used for static water level data (if applicable): ☐ M Scope ☐ Air Line ☐ Tape ☐ N/A

If the diversion is used for irrigation purposes, please indicate the number of acres irrigated: \_\_\_\_\_

I certify under penalty of law in accordance with N.J.S.A 58:1A-5(b) that the information provided in this report is accurate and complete.

NAME

TITLE

SIGNATURE

DATE

PHONE NUMBER

Private Quarterly Monitoring Report

Preprint Creation Date: 06/07/2005

\*Permit means Approval, Registration, Certification, etc.



# Water Diversion And Monitoring Results Form

PROGRAM INTEREST: 2539E - HIGGINS FARM SUPERFUND SITE

MONITORING PERIOD: 07/01/2005 - 09/30/2005

ACTIVITY CODE: EQP040001 - Water Allocation Permit Equivalency - New

Subject Item	Parameter	Required Frequency	JUL		AUG		SEP		Report Value in Units of:
			Quantity/Result	Sample Date	Quantity/Result	Sample Date	Quantity/Result	Sample Date	
WARG 785874 - DIABASE AQUIFER SOURCES, ALL SOURCES	Water Diverted	Each Month							Million Gallons

☐ Check here for revised report



NJDEP Preprint ID: 45315

## State of New Jersey

Department of Environmental Protection  
Water Supply Administration - Bureau of Water Allocation  
PO Box 426, Trenton, New Jersey 08625-0426  
(609) 292-2957 Phone/ (609) 633-1231 Fax

### Quarterly Diversion and Monitoring Report -Private

RESPONSIBLE ENTITY:

USEPA  
290 BROADWAY - 19TH FLR  
NEW YORK, NY 10278

LOCATION OF ACTIVITY:

HIGGINS FARM SUPERFUND SITE  
RT 518  
FRANKLIN TWP. NJ 08873

REPORT RECIPIENT:

NEIL RAVENSBERGEN  
C/O SEVENSON ENVIRONMENTAL  
71A RT 518  
PRINCETON, NJ 08540

PROGRAM INTEREST:

2539E

ACTIVITY CODE:

EQP040001

MONITORING PERIOD:

10/01/2005 - 12/31/2005

\*PERMIT EFFECTIVE DATE:

07/01/2005

**INSTRUCTIONS**

- 1) Reports must be completed and submitted to the Bureau of Water Allocation by the last day of the month following the close of the specified monitoring period. Failure to submit the required information by the due date will result in automatic violation(s) of the specified Water Allocation Permit.

1st Quarter	JAN, FEB, MAR	Report due April 30th
2nd Quarter	APR, MAY, JUN	Report due July 30th
3rd Quarter	JUL, AUG, SEP	Report due October 30th
4th Quarter	OCT, NOV, DEC	Report due January 30th

- 2) Forms must be completed in ink only.  
3) All values must be reported in units indicated on the pre-printed forms.

The diversion is measured by: ☐ Totalizing flow meter(s) ☐ Estimated If not metered, provide the basis of estimation: \_\_\_\_\_

Check appropriate box indicating method used for static water level data (if applicable): ☐ M Scope ☐ Air Line ☐ Tape ☐ N/A

If the diversion is used for irrigation purposes, please indicate the number of acres irrigated: \_\_\_\_\_

*I certify under penalty of law in accordance with N.J.S.A 58:1A-5(b) that the information provided in this report is accurate and complete.*

NAME

TITLE

SIGNATURE

DATE

PHONE NUMBER

Private Quarterly Monitoring Report

Preprint Creation Date: 06/07/2005

\*Permit means Approval, Registration, Certification, etc.

# Water Diversion And Monitoring Results Form

PROGRAM INTEREST: 2539E - HIGGINS FARM SUPERFUND SITE

MONITORING PERIOD: 10/01/2005 - 12/31/2005

ACTIVITY CODE: EQP040001 - Water Allocation Permit Equivalency - New

Subject Item	Parameter	Required Frequency	OCT		NOV		DEC		Report Value in Units of:
			Quantity/Result	Sample Date	Quantity/Result	Sample Date	Quantity/Result	Sample Date	
WARG 785874 - DIABASE AQUIFER SOURCES, ALL SOURCES	Water Diverted	Each Month							Million Gallons

**Administrative Hearing Request Checklist  
And Tracking Form for Permits**

1. Permit Being Appealed:

\_\_\_\_\_  
Title and Type of Permit

\_\_\_\_\_  
Issuance Date of Permit

\_\_\_\_\_  
Permit Number

2. Person Requesting Hearing:

\_\_\_\_\_  
Name/Company

\_\_\_\_\_  
Name of Attorney (if applicable)

\_\_\_\_\_  
Address

\_\_\_\_\_  
Address of Attorney

3. The following information must be included with the request:

- a. The date the permittee received the final permit;
- b. A copy of permit with a list of all permit conditions and issues contested;
- c. The legal and factual questions at issue;
- d. A statement as to whether or not the permittee raised each legal and factual issues during the public comment period of the permit;
- e. Suggested revised or alternative permit conditions;
- f. An estimate of the time required for the hearing;
- g. A request, if necessary, for a barrier-free hearing location for physically disabled persons;
- h. A clear indication of any willingness to negotiate a settlement with the Department prior to the Department's processing of the hearing request to the Office of Administrative Law; and
- i. This form, completed with all of the information listed above, signed, and dated, including attachments, to:

- i. Office of Legal Affairs  
ATTENTION: Adjudicatory Hearing Requests  
Department of Environmental Protection  
401 East State Street  
P.O. Box 402  
Trenton, New Jersey 08625-0402

- ii. Fred Sickels  
Water Supply Administration  
Bureau of Water Allocation  
P.O. Box 426  
Trenton, New Jersey 08625

- iii. All co-permittees (w/attachments)

4. Signature: \_\_\_\_\_ Date: \_\_\_\_\_